3.13 Transportation

3.13.1 Introduction and Summary

This section presents the impacts to transportation and traffic as a result of implementing the Proposed Project and alternatives. All construction and operation/maintenance activities associated with water conservation under the Proposed Project and alternatives would be consistent with existing agricultural activities in the IID water service area and would not affect roadway levels of service (LOS). The various components of the Proposed Project in the LCR and SDCWA service area subregions would not require construction or the use of considerable numbers of vehicles or amounts of equipment that could impact transportation and traffic in these areas. Table 3.13-1 summarizes the impacts of the Proposed Project and alternatives on transportation and traffic.

3.13.2 Regulatory Framework

The US Department of Transportation (DOT) (DOT Order 5610.1C) and Federal Highway Administration (FHWA) (23 CFR 771 and FHWA Technical Advisory T6640.8A) provide guidance and procedures for federal highway projects. State transportation departments, such as Caltrans, provide state standards and regulations for transportation and traffic.

Regional transportation plans prepared by SCAG, SANDAG, and circulation elements of general plans prepared by the California counties of San Diego, Riverside, and Imperial, address local standards for transportation and traffic, including congestion management thresholds for intersections.

3.13.3 Existing Setting

3.13.3.1 Lower Colorado River

The major transportation route along the LCR between Parker and Imperial Dams is SR 95, which is parallel to the California side of the Colorado River, from the Vidal Junction south to Blythe. Additional east-west transportation routes, such as I-10 and SR 78, provide access to the Colorado River from locations as far west as the Pacific Ocean. SR 78 travels east from Carlsbad at the coast and through the IID water service area before bending northeast and traveling parallel to the Colorado River from the Cibola NWR to Palo Verde. SR 78 ends at its interchange with I-10. SR 62, another east-west transportation route, travels from as far west as the Palm Springs area after branching to the northeast from I-10. SR 62 crosses the Colorado River at the City of Earp. The BNSF Railroad operates a rail line that crosses the Colorado River at the City of Earp. Figure 3.13-1 illustrates the primary transportation network along the LCR.

3.13.3.2 IID Water Service Area and AAC

Caltrans, regional agencies such as SCAG, Imperial County, and the federal government plan, construct, and maintain regional highway transportation systems serving the IID water service area. Transportation planning for roadways other than regional highways is provided in the circulation elements of the Imperial County General Plan (County of Imperial 1997c).

TABLE 3.13-1
Summary of Transportation Impacts[1]

Proposed Project: 300 KAFY All Conservation Measures	Alternative 1: No Project	Alternative 2: 130 KAFY On-farm Irrigation System Improvements Only	Alternative 3: 230 KAFY All Conservation Measures	Alternative 4: 300 KAFY Fallowing Only
LOWER COLORADO RIVER				
No impacts.	Continuation of existing conditions.	No impacts.	No impacts.	No impact.
IID WATER SERVICE AREA AND AAC				
T-1: Traffic from construction of on-farm irrigation and water delivery system improvements: Less than significant impact.	Continuation of existing conditions.	**A2-T-1: Traffic from construction of on-farm and water delivery system improvements:** Less than significant impact.	**A3-T-1: Traffic from construction of on-farm irrigation and water delivery system improvements:** Less than significant impact.	No impact.
T-2: Traffic from operation of on-farm irrigation and water delivery system improvements: Less than significant impact.	Continuation of existing conditions.	**A2-T-2: Traffic from operation on-farm irrigation system improvements:** Less than significant impact.	**A3-T-2: Traffic from operation on-farm irrigation and water delivery system improvements:** Less than significant impact.	No impact.
HCP-T-3: Traffic from construction of habitat and channels connecting the drains with the Salton Sea: Less than significant impact.	Continuation of existing conditions.	**Same as HCP-T-3.**	**Same as HCP-T-3.**	**Same as HCP-T-3.**
SALTON SEA				
No impact.	Continuation of existing conditions.	No impact.	No impact.	No impact.
SDCWA SERVICE AREA				
No impact.	Continuation of existing conditions.	No impact.	No impact.	No impact.

[1] Programmatic level analyses of USFWS' biological conservation measures in LCR subregion and HCP (Salton Sea Portion) Approach 1: Hatchery & Habitat Replacement in Salton Sea subregion are not summarized in the table because no significance determinations have been made. Subsequent environmental documentation will be required if potential impacts are identified.

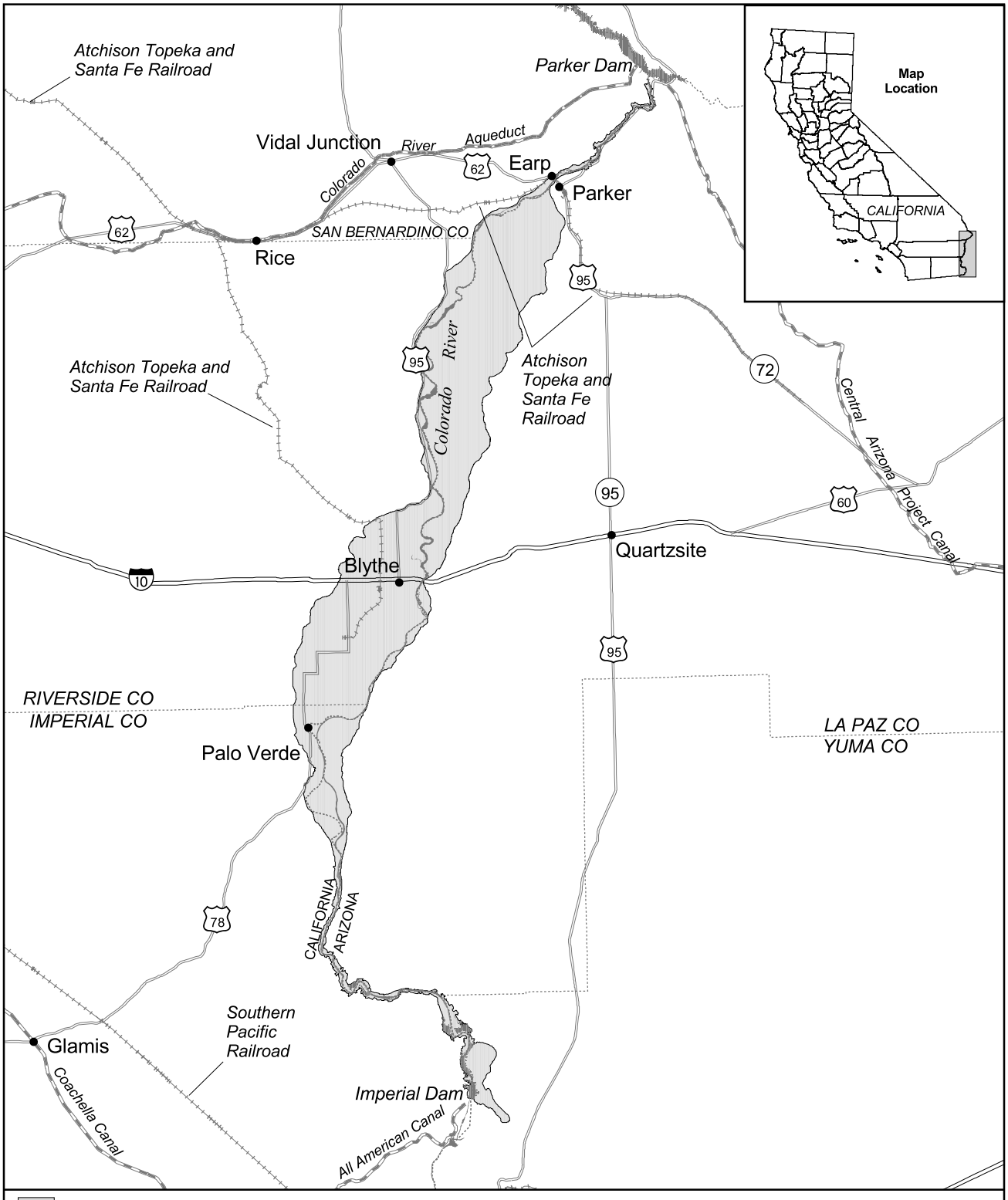

Figure 3.13-1
Primary Transportation Network
Lower Colorado River
Geographic Subregion
IID Water Conservation and Transfer Project Draft EIR/EIS

Roadway operating conditions are determined by Caltrans, SCAG, and Riverside and Imperial Counties and are generally expressed in terms of LOS. LOS is a qualitative measure describing operational conditions for traffic flow. These conditions account for speed, travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. A description of operating conditions that determine LOS is provided in Table 3.13-2.

TABLE 3.13-2
Road Transportation Level of Service (LOS) Definitions

LOS	Description
A	Free flow, with user unaffected by the presence of other users on the roadway.
B	Stable flow, but presence of other users in traffic stream becomes noticeable.
C	Stable flow, but operation of users becomes affected by others in the traffic stream.
D	High-density but stable flow, speed and freedom of movement are severely restricted, poor level of comfort and convenience.
E	High-density with traffic demand usually at capacity, resulting in very long traffic delays.
F	Forced or breakdown flow with traffic demand exceeding capacity, unstable stop-and-go traffic.

The transportation network within the IID water service area consists of interstates, highways, state routes, and rural county highways that provide access through sparsely populated desert. In addition, the SPRR operates a main line connecting the west coast rail system with operations in southern and midwestern states (BLM and County of Imperial 1995). Figure 3.13-2 illustrates the primary transportation network in the IID water service area. I-8 provides the primary east-west transportation route from Yuma, Arizona on the Colorado River through the Imperial Valley to San Diego (Reclamation and IID 1994). SR 78, a second east-west transportation route, commences at Blythe in Riverside County and runs through the populated portions of the IID water service area and San Diego, terminating at I-5 in San Diego. Most of SR 78 is a two-lane highway.

Primary north-south routes include SR 86, SR 111, and SR 115. These state routes are primarily two-lane roads that provide access between I-8 and SR 78 in the Brawley, El Centro, and Holtville portions of the IID water service area (BLM and County of Imperial 1995). SR 111 begins at the Mexican border in Calexico and extends north to Brawley, Calipatria, and Niland. SR 115 connects Calipatria and Holtville (north-south). SR 98 extends in an east-west direction parallel to the International Boundary (Reclamation and IID 1994). I-8 traffic volumes are well under capacity.

The current LOS for most of SR 111 ranges from A to C (County of Imperial 1997). However, slow-moving farm equipment, recreational vehicles (RVs), and a lack of passing lanes contribute to traffic congestion on SR 111 near its intersection with I-8. Caltrans is planning to upgrade SR 111 to a four-lane expressway from Ross Road (north of I-8) to SR 78 to relieve congestion in this area. This transportation improvement project is scheduled for completion in 2002 (SSA and Reclamation 2000).

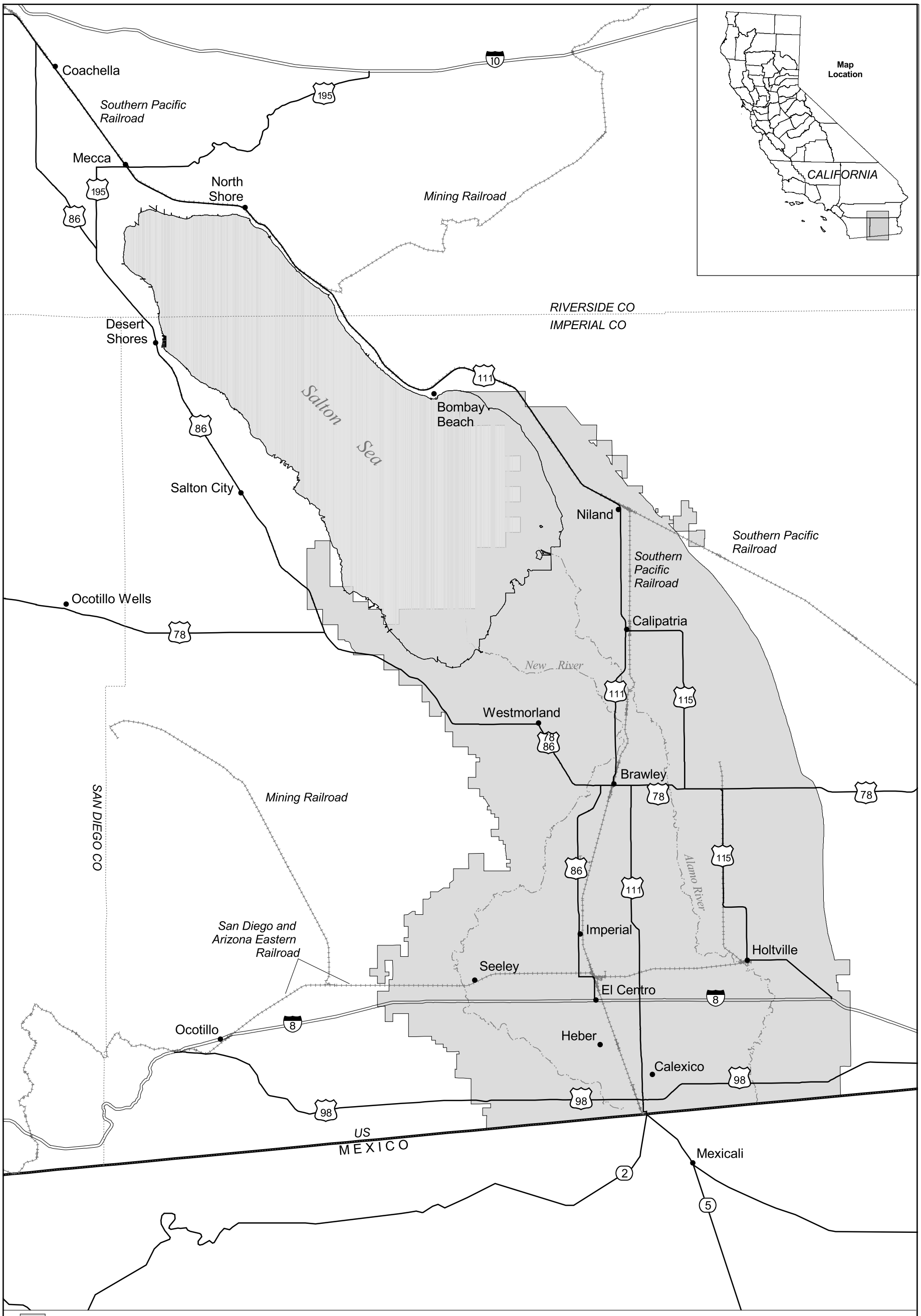

Figure 3.13-2
Primary Transportation Network
IID Water Service Area and Salton Sea
IID Water Conservation and Transfer Project Draft EIR/EIS

The existing LOS on SR 78 is B (County of Imperial 1997d). Caltrans is planning a four-lane expressway bypass to relieve congestion along SR 78 near Brawley. The bypass would extend from 1.5 miles south of the eastern junction of SR 78 and SR 111 to SR 86 north of Brawley (County of Imperial 1997d). The current LOS along SR 86 ranges from A to C, depending on the segment location.

The SPRR main line enters the IID water service area from Yuma, Arizona. The line extends northwest toward Indio before turning west toward Los Angeles. Branch lines and spurs off the main line serve other IID water service area communities. One branch line, the Holten Interurban Railroad, provides service from Holtville to El Centro (Reclamation and IID 1994). In addition to the SPRR main line, a regional airport located in Imperial serves the area.

Unpaved service roads along irrigation canals within the IID water service area are used for maintenance, recreational travel, and surveillance by the border patrol. Additional jeep trails and dirt roads are occasionally used for OHV recreation activities (Reclamation and IID 1994). In general, IID water service area roads and farm access roads are used daily by vehicles associated with normal farming activities.

3.13.4 Impacts and Mitigation Measures

3.13.4.1 Methodology

The analysis of impacts to traffic and transportation focuses on the vehicle and equipment traffic required during the construction and operation of water conservation measures for transfer, IOP compliance and implementation of HCP measures. The region of influence for the transportation and traffic analysis includes major highways and roads in San Diego, Riverside, and Imperial Counties of California, with emphasis on the LCR, Imperial Valley, Salton Sea, and SDCWA service area. However, because construction and operation of conservation measures could only occur in the IID water service area, evaluation of potential impacts is focused on that area.

The transportation/traffic analysis is qualitative because the anticipated construction activities would be consistent with existing conditions and activities in the Imperial Valley. Construction would be expected to occur in increments until sufficient conservation measures have been constructed to conserve 300 KAFY. In general, measures would be constructed each year to conserve an additional 20 to 25 KAFY. It is assumed that, during the life of the project, any combination of conservation measures could be constructed in increments of 20 to 25 KAFY until the maximum level of conservation, 300 KAFY is reached. Additional conservation measures may be constructed to conserve water for the IOP and HCP Approach 2. If fallowing is selected for all or a portion of the conservation, no or less construction would be required. The transfer project would continue until year 2077. To evaluate the maximum potential impact to transportation, the assumption was made that the most construction-intensive conservation measure using the greatest number of vehicles would be used to generate 109 KAFY (25 KAFY for transfer plus 25 KAFY for HCP Approach 2+ 59 KAFY for IOP compliance). Drip irrigation, which requires 89 days of construction time and 13 pieces of equipment per 80-acre farm (average size), would be the most construction-intensive of the conservation measures included in the Proposed Project.

The assumption that 109 KAFY of conservation measures would be constructed is conservative.

Using drip irrigation, each 80-acre farm would yield a conservation of 53.25 AFY (assumes 0.71 AF/acre and 75 of 80 acres are irrigated). Therefore, about 2,046 80-acre farms would be required to generate 109 KAFY of conserved water. Table 3.13-3 shows the calculation used to determine that the predicted number of vehicles in a 10-square-mile area of the IID water service area during construction of conservation measures would be 16.

TABLE 3.13-3
Predicted Maximum Daily Traffic Trips During Construction of Conservation Measures[1]

Project Component	Number of Pieces of Equipment Required	Construction Days Required for each system	Number of Construction Periods/year	Number of Drip Systems to be constructed per year	Number of Facilities constructed at once	Pieces of Equipment in IID per day	Trips per day in 10 square miles
25 KAFY Conservation for Transfer	13	89	4	470	120	1,560	16
25 KAFY for implementation of HCP Approach 2	13	89	4	470	120	1,560	16
59 KAFY for compliance with the IOP	13	89	4	1,107	277	3,601	36
Totals	13	89	4	2,047	517	6,721	68

[1] All calculations assume that drip irrigation would be used. Drip irrigation is the conservation measure that would require the greatest amount of equipment for the longest construction period, and, therefore, represents the worst-case scenario for generating traffic during construction of conservation measures.

The following additional assumptions were applied to the equipment/traffic calculations shown in Table 3.13-3:

- Construction work required for each conservation measure would be evenly distributed throughout the year because of limitations on equipment and operator resources.
- A 350-day year would be assumed, accounting for holiday time off.
- It is unlikely that all equipment would be removed from the construction sites daily, so half of the required equipment (6.5 pieces) is assumed to be stored in a staging area near the construction site.
- Half of the required construction equipment (6.5 pieces) would travel to and from the construction site—once each day two trips per day per piece of equipment.

Subregions Excluded from Impact Analysis. No construction or operation activities resulting in traffic impacts would occur in the SDCWA or Salton Sea subregion; therefore, those subregions are not included in the impact discussions below.

3.13.4.2 Significance Criteria

The Proposed Project and/or alternatives would have a significant impact if they:

- Cause a substantial increase in traffic in relation to the existing load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or the amount of congestion at intersections).
- Cause an exceedance, either individually or cumulatively, of a LOS standard established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks.
- Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

3.13.4.3 Proposed Project

LOWER COLORADO RIVER

Water Conservation and Transfer

No construction or operation would occur with changing the point of diversion on the LCR from Imperial to Parker Dam. Therefore, no construction or operation-related transportation impacts would occur.

Biological Conservation Measures in USFWS' Biological Opinion

Construction of the biological conservation measures would likely require some equipment trips. However, the number of trips required is anticipated to be small and less than significant. As additional details on the biological conservation measures are developed and potential traffic impacts are identified, they will be addressed in subsequent environmental documentation, as necessary. Operation of the biological conservation measures would not result in any transportation impacts.

Impacts resulting from the implementation of the biological conservation measures in USFWS' Biological Opinion would be the same for Alternatives 2, 3, and 4; therefore, they are not discussed under each alternative.

IID WATER SERVICE AREA AND AAC

Water Conservation and Transfer

Impact T-1: Traffic from construction of irrigation and water delivery system improvements. If conservation measures requiring construction were selected, limited construction traffic would be generated as a result of constructing on-farm or delivery system improvements for transfer, the IOP and HCP Approach 1. The impact on traffic as a result of the presence of construction equipment on public roads would be similar to existing agricultural practices in the Imperial Valley (over an area of approximately 1,000 square miles). Improvements would be implemented gradually, and construction would be conducted over a period of time; thus, the improvements would not result in intensive construction activities and associated traffic. Construction of these improvements would be temporary.

Equipment traffic required would primarily use county roads, farm access roads, and existing service roads. The anticipated construction-related traffic would be expected to be minimal: 68 trips per day for 10 square miles under the worst-case scenario as described in the Methodology section and shown in Table 3.13-1. The small increase in construction-related traffic on arterials and highways, which provide access to and from the farms, would not be expected to impact transportation or circulation because roadways are currently used for transport resulting from ongoing agricultural activities, and use of these roadways during construction would not differ greatly from existing conditions resulting from agricultural practices.

Roadways that provide direct regional access to the IID water service area would not be affected because the roadway capacities would be substantial enough to accommodate these increases without a change in LOS. Impacts to transportation and traffic would be expected to be less than significant during construction because the construction-related traffic would be short-term and temporary. This traffic would not differ substantially in its impact from current agricultural vehicle traffic, and the density of the equipment distributed throughout the IID water service area would be low. Implementation of fallowing would not require construction. (Less than significant impact.)

Impact T-2: Traffic from operation of irrigation and water delivery system improvements. Maintenance requirements for conservation facilities would be expected to be minimal. Maintenance would be conducted regularly by participating farmers and in conjunction with normal farm activities, including the removal of sediment from TRS, reservoirs, and cascading tailwater head ditches (frequency would depend on soil and crop type). Leveling and smoothing of fields is usually conducted every 1 to 2 years, and laser leveling is typically performed every 5 years.

Maintenance of water delivery system improvements would occur according to existing IID maintenance schedules. Scheduled maintenance would include activities such as vegetation and sediment removal from laterals and irrigation channels and from above subsurface seepage collection lines, replacement or repair of concrete panels, and service to sump pumps and motors. Additional, unscheduled maintenance would be conducted on an as-needed basis, for example, repairs to canal and reservoir embankment slippage, settlement, or erosion damage; pump/motor repair; and/or repairs required as a result of vandalism (replacement of power meters, float control assemblies, etc.).

Although maintenance of conservation facilities would occur over the long term (up to 75 years), maintenance activities would be conducted during short periods of time using on-site equipment and would not require use of roadways that provide direct regional access to the IID water service area. Implementation of fallowing would likely reduce regional traffic. Therefore, impacts would be less than significant. (Less than significant impact.)

Inadvertent Overrun and Payback Policy (IOP)

Traffic impacts associated with conservation required for compliance with the IOP are included in Impact T-1.

Impacts resulting from the implementation of the IOP would be the same for Alternatives 2, 3 and 4, therefore, they are not discussed under each alternative.

Habitat Conservation Plan (HCP) (IID Water Service Area Portion)

Traffic to conduct surveys would consist of regular passenger cars, four-wheel drives, and pickup trucks. Surveys would involve an estimated fewer than 10 staff and would, therefore, not generate any noticeable increase in traffic. This would result in virtually no impact.

Impact HCP-T-3: Traffic from construction of habitat and channels connecting the drains with the Salton Sea. Similar to Impact T-1, limited construction traffic would be generated from constructing marsh and/or native tree habitat, and from connecting the channels for Salton Sea drains to mitigate for impacts on pupfish (see Section 3.2, Biological Resources). The impact on traffic as a result of the presence of construction equipment on public roads would be similar to that of existing agricultural practices in the Imperial Valley (over an area of approximately 1,000 square miles). Implementation of the HCP would be gradual, and construction would be conducted over a period of time, so these activities would not result in intensive construction activities and associated traffic.

As discussed under Impact T-1, required equipment traffic would primarily use county roads, farm access roads, and existing service roads, causing a small increase in construction-related traffic on arterials and highways. HCP-related construction would be short-term and temporary. Impacts to transportation and traffic would be expected to be less than significant during construction because the construction-related traffic would be short-term and temporary. This traffic would not differ substantially in its impact from current agricultural vehicle traffic, and the density of the equipment distributed throughout the IID water service area would be low. (Less than significant impact.)

HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement

The anticipated equipment requirements for this Approach have not been developed. However, it is expected that they would be similar to the equipment requirements the IID water service area portion of the HCP and would result in a significant impact. As additional details of this approach are developed and if potential traffic impacts are identified, they will be evaluated in subsequent environmental analysis.

HCP (Salton Sea Portion) Approach 2 (HCP2): Use of Conserved Water as Mitigation

The traffic impacts associated with implementation of this approach are included in Impact T-1.

Impacts resulting from implementation of the HCP would be the same for Alternatives 2, 3 and 4; therefore, they are not discussed under each alternative.

3.13.4.4 Alternative 1: No Project

Implementation of the No Project alternative would maintain existing conditions with regard to transportation in the LCR, IID water service area, and the Salton Sea subregions.

3.13.4.5 Alternative 2 (A2): Water Conservation and Transfer of Up To 130 KAFY to SDCWA

IID WATER SERVICE AREA AND AAC

Water Conservation and Transfer

Impact A2-T-1: Traffic from construction of on-farm irrigation and water delivery system improvements. Impacts to transportation resulting from implementation of Alternative 2 would be the same as described above under Impact T-1 for the Proposed Project. However, the impacts would have a shorter duration because a total of only 130 KAFY would be conserved at a rate of 20 KAFY per year. (Less than significant impact.)

Impact A2-T-2: Traffic from operation of on-farm irrigation system improvements. Impacts to transportation resulting from implementation of Alternative 2 would be the same as described above under Impact T-2 for the Proposed Project. However, the impacts would have a shorter duration, because a total of only 130 KAFY would be conserved. (Less than significant impact.)

3.13.4.6 Alternative 3 (A3): Water Conservation and Transfer of Up To 230 KAFY to SDCWA, CVWD, and/or MWD (All Conservation Measures)

IID WATER SERVICE AREA AND AAC

Impact A3-T-1: Traffic from construction of on-farm irrigation and water delivery system improvements. Impacts to transportation resulting from implementation of Alternative 3 would be the same as described above under Impact T-1 for the Proposed Project. However, the impacts would be smaller scale because a total of only 230 KAFY would be conserved. Fallowing would not require any construction, so implementation of fallowing would have no impact on traffic. (Less than significant impact.)

Impact A3-T-2: Traffic from operation of on-farm irrigation and water delivery system improvements. Impacts on transportation resulting from implementation of Alternative 3 would be the same as described above under Impact T-2 for the Proposed Project. However, the impacts would be smaller because a total of only 230 KAFY would be conserved. O&M of fallowing would result in minimal traffic impacts because fallowing would cause even less traffic than normal agricultural activity (see Section 3.13.4.7, Alternative 4, below). Therefore, impacts to transportation and traffic are anticipated to be less than significant during operation of Alternative 3. (Less than significant impact.)

3.13.4.7 Alternative 4 (A4): Water Conservation and Transfer of Up To 300 KAFY to SDCWA, CVWD, and/or MWD (Fallowing As Exclusive Conservation Measure)

IID WATER SERVICE AREA AND AAC

Water Conservation and Transfer

Under Alternative 4, fallowing would be employed in the IID water service area to conserve water and for mitigation. O&M activities associated with fallowing, such as revegetating land to prevent the exposure of topsoil to the atmosphere, would be considered a continuation of existing practices within the IID water service area and would not contribute to an increase in operation/maintenance equipment traffic. Alternative 4 would not require construction; therefore, no impacts to transportation or traffic is anticipated.